AMENDMENTS TO AND LISTING OF THE CLAIMS

This listing of the claims will replace all prior versions and listings of the claims in this application.

Please amend the claims as follows:

1-100 (Canceled).

101. (New) A process for isolating nucleic acids comprising the following steps:

charging a non-siliceous membrane from a given direction with nucleic acids, wherein said nonsiliceous membrane has two opposing sides;

immobilizing the nucleic acids on one side of the non-siliceous membrane by binding the nucleic acids to said one side of the membrane in the presence of an immobilization buffer;

releasing the immobilized nucleic acids from the non-siliceous membrane by applying an elution agent wherein the released nucleic acids do not pass through to the other side of the non-siliceous membrane; and

removing the released nucleic acids from the same side of the non-siliceous membrane on which the nucleic acids were immobilized,

wherein the released nucleic acids are removed without retrieving materials that have contacted the other side of said non-siliceous membrane, and wherein the membrane has pores that have a diameter of 1 μm to 50 μm.

102. (New) The process according to claim 101, wherein, between the immobilization and release steps, a washing of the immobilized nucleic acids with at least one washing buffer takes place without releasing the nucleic acids from the membrane.

103. (New) The process according to claim 102, wherein the washing includes the following steps for each washing buffer:

transferring a predetermined amount of washing buffer to the non-siliceous membrane, and

drawing the washing buffer through the non-siliceous membrane by suction or centrifugation.

104. (New) The process according to claim 101 further comprising the following steps:

mixing of the nucleic acids with the immobilization buffer;

charging of the nucleic acids mixed with the immobilization buffer on to the non-siliceous membrane;

drawing the fluid components of the mixture through the non-siliceous membrane.

105. (New) The process according to claim 101 or claim 103, wherein at least one of the steps is carried out completely automatically by means of an automatic machine.

106. (New) The process according to claim 105, wherein all the steps in the process are carried out by an automatic machine in a controlled sequence.

107. (New) The process according to claim 105, wherein multiple isolations of nucleic acids are carried out simultaneously using a multiplicity of membranes.

108. (New) The process according to claim 101, characterized by the fact that between the release and the removal steps at least one chemical reaction is carried out on the nucleic acids.

109. (New) The process according to claim 104, wherein said immobilization buffer includes aqueous solutions of salts of alkaline and alkaline earth metals with mineral acids.

110. (New) The process according to claim 109, wherein said immobilization buffer includes alkaline or alkaline earth halogenides or sulfate.

111. (New) The process according to claim 110, wherein said immobilization buffer includes halogenides of sodium or potassium or magnesium sulfate.

112. (New) The process according to claim 104, wherein the immobilization buffer includes aqueous solutions of salts of monobasic or polybasic or polyfunctional organic acids with alkaline or alkaline earth metals.

113. (New) The process according to claim 112, wherein said aqueous solutions of salts of polyfunctional organic acids with alkaline or alkaline earth metals includes aqueous solutions of salts of sodium, potassium, or magnesium with organic dicarboxylic acids.

114. (New) The process according to claim 113, wherein said organic dicarboxylic acid is oxalic acid, malonic acid, or succinic acid.

115. (New) The process according to claim 112, wherein said aqueous solutions of salts of polyfunctional organic acids with alkaline or alkaline earth metals includes aqueous solutions of salts of sodium or potassium in combination with hydroxycarboxylic or polyhydroxycarboxylic acid.

116. (New) The process according to claim 115, wherein said polyhydroxycarboxylic acid is citric acid.

117. (New) The process according to claim 104, wherein said immobilization buffer includes a phenol or polyphenol.

118. (New) The process according to claim 101, wherein the releasing step is carried out using an aqueous salt or buffer solution.

119. (New) The process according to claim 101, wherein the nucleic acids immobilized on the non-siliceous membrane are released using water.

120. (New) The process according to claim 104, wherein said immobilization buffer comprises an aqueous solution of a chaotropic agent.

121. (New) The process according to claim 120, wherein the chaotropic agent is selected from the group consisting of trichloro-acetates, thiocyanates, perchlorates, iodides, guanidinium hydrochloride, guanidinium isothiocyanate, and urea.

122. (New) The process according to claim 120, wherein said immobilization buffer comprises a 0.01-molar to 10-molar aqueous solution of the chaotropic agent.

123. (New) The process according to claim 122, wherein said immobilization buffer comprises a 0.1-molar to 7-molar aqueous solution of the chaotropic agent.

124. (New) The process according to claim 123, wherein said immobilization buffer comprises a 0.2-molar to 5-molar aqueous solution of the chaotropic agent.

125. (New) The process according to any one of claims 120 through 124, wherein said immobilization buffer comprises an aqueous solution of sodium perchlorate, guanidinium hydrochloride, guanidinium isothiocyanate, sodium iodide, or potassium iodide.

126. (New) The process according to claim 101, wherein the membrane is a hydrophobic membrane.

127. (New) The process according to claim 126, wherein the hydrophobic membrane is made of a polymer with polar groups.

128. (New) The process according to claim 101, wherein the membrane is a hydrophilic membrane with a hydrophobisized surface.

129. (New) The process according to claim 101, wherein the membrane is composed of a polymeric material selected from the group consisting of nylon, a polysulfone, polyether sulfone, polycarbonate, polyacrylate, acrylic acid copolymer, polyurethane, polyamide, polyvinyl chloride, polyfluorocarbonate, polytetrafluoroethylene, polyvinylidene fluoride, polyvinylidene difluoride, polyethylene tetrafluoroethylene copolymerisate, polyethylene chlorotrifluoroethylene copolymerisate, and polyphenylene sulfide.

130. (New) The process according to claim 129, wherein the nylon is hydrophobisized nylon.

131. (New) The process according to claim 129, wherein the membrane is coated with a hydrophobic coating agent selected from the group consisting of paraffins, waxes, metallic soaps, quaternary organic compounds, urea derivates, lipid-modified melamine resins, organic zinc compounds, and glutaric dialdehyde.

132. (New) The process according to claim 101, wherein the membrane is a hydrophilic or hydrophilized membrane.

133. (New) The process according to claim 132, wherein the membrane is composed of hydrophilized nylon, polyether sulfone, polycarbonate, polyacrylate, acrylic acid copolymer, polyurethane, polyamide, polyvinyl chloride, polyfluorocarbonate, polytetrafluoroethylene, polyvinylidene fluoride, polyvinylidene difluoride, polyethylene tetrafluoroethylene copolymerisate, polyethylene chlorotrifluoroethylene copolymerisate, or polyphenylene sulfide.

134. (New) A process for isolating nucleic acids comprising:

(1) immobilizing nucleic acids on one side of a non-siliceous membrane by binding the nucleic acids to said one side of the membrane in the presence of an immobilization buffer, followed by

(2) releasing the immobilized nucleic acids from the membrane by applying to the membrane an elution agent, wherein the eluted nucleic acids do not pass through to the other side of the non-siliceous membrane; and

(3) collecting the released nucleic acids from the same side of the membrane on which the nucleic acids were immobilized;

wherein the nucleic acids are collected without retrieving materials that have contacted said other side of said membrane; wherein the membrane comprises a material selected from the group consisting of nylon, polysulfone, polyether sulfone, polycarbonate, polyacrylate, acrylic acid copolymer, polyurethane, polyamide, polyvinyl chloride, polyfluorocarbonate, polytetrafluoroethylene, polyvinylidene fluoride, polyvinylidene difluoride, polyethylene tetrafluoroethylene copolymerisate, polyethylene chlorodifluoroethylene copolymerisate, and polyphenylene sulfide; wherein the membrane material is hydrophilic, hydrophobic, hydrophilisized, or hydrophobisized; and wherein the membrane has pores that have a diameter of 1 μm to 50 μm.

135. (New) The process according to claim 134, wherein the membrane is a hydrophobisized nylon membrane.

136. (New) The process according to claim 134, wherein the membrane is a hydrophilic membrane, which is coated with a hydrophobic coating agent selected from the group consisting of paraffins, waxes, metallic soaps, quaternary organic compounds, urea derivates, lipid-modified melamine resins, organic zinc compounds, and glutaric dialdehyde.

137. (New) The process according to claim 134, wherein said process for isolating nucleic acids is carried out in a plurality of isolation devices installed on a multi-well plate.

138. (New) The process according to claim 102, wherein the washing step is carried out using an aqueous solution of a salt of an alkaline or alkaline earth metal with a mineral acid.

139. (New) The process according to claim 102, wherein the washing step is carried out using an aqueous solution of a salt from a monobasic, polybasic, or polyfunctional organic acid with an alkaline or alkaline earth metal.

140. (New) The process according to claim 102, wherein the washing step is carried out using an aqueous solution of a chaotropic agent.

141. (New) The process according to claim 102, wherein the washing step is carried out using a hydroxyl derivative of an aliphatic or acyclic saturated or unsaturated hydrocarbon.

142. (New) The process according to claim 102, wherein the washing step is carried out using a phenol or a polyphenol.

143. (New) The process according to claim 131 or claim 136, wherein said metallic soaps are in admixture with aluminum or zirconium salts.

144. (New) The process according to claim 134, further comprising the steps of:

mixing the nucleic acids with said immobilization buffer,

charging the nucleic acids mixed with said immobilization buffer onto the membrane,

optionally, washing the nucleic acids immobilized on the membrane,

drawing the unbound fluid components of the mixture or wash buffer through the membrane.

145. (New) The process according to claim 144, wherein said immobilization buffer includes aqueous solutions of salts of alkaline and alkaline earth metals with mineral acids.

146. (New) The process according to claim 144, wherein said immobilization buffer includes aqueous solutions of salts of monobasic or polybasic or polyfunctional organic acids with alkaline or alkaline earth metals.

147. (New) The process according to claim 144, wherein said immobilization buffer includes hydroxyl derivatives of aliphatic or acyclic saturated or unsaturated hydrocarbons.

148. (New) The process according to claim 144, wherein said immobilization buffer includes a phenol or polyphenol.

149. (New) The process according to claim 134 or claim 144, wherein a chaotropic agent is used for the immobilization of the nucleic acids.

150. (New) The process according to claim 134 or claim 144, wherein said C1-C5 alkanol is selected from the group consisting of methanol, ethanol, n-propanol, isopropanol, tert.-butanol, and pentanols.

151. (New) The process according to claim 101, wherein the non-siliceous membrane is oriented so that one of the two opposing sides of the non-siliceous membrane is on top of the other side so that the nucleic acids are charged on and removed from the top side of the non-siliceous membrane.

152. (New) The process according to claim 104, wherein the immobilization buffer includes hydroxyl derivates of aliphatic or acyclic saturated or unsaturated hydrocarbons.

153. (New) The process according to claim 152, wherein said hydroxyl derivatives are C_1-C_5 alkanols.

154. (New) The process according to claim 153, wherein said C_1-C_5 alkanol is selected from the group consisting of methanol, ethanol, n-propanol, isopropanol, tert.-butanol, and pentanols.

155. (New) The process according to claim 152, wherein said hydroxyl derivative is an aldite.

156. (New) The process according to claim 101, wherein a chaotropic agent is used for the immobilization buffer.

157. (New) The process according claim 156, wherein the chaotropic agent is selected from the group consisting of trichloro-acetates, thiocyanates, perchlorates, iodides, guanidinium hydrochloride, guanidinium isothiocyanate, and urea.

158. (New) The process according to claim 156, wherein a 0.01 molar to 10 molar aqueous solution of the chaotropic agent is used for the immobilization buffer.

159. (New) The process according to claim 158, wherein a 0.1 molar to 7 molar aqueous solution of the chaotropic agent is used for the immobilization buffer.

160. (New) The process according to claim 159, wherein a 0.2 molar to 5 molar aqueous solution of the chaotropic agent is used for the immobilization buffer.

161. (New) The process according to anyone of claims 156-160, wherein the chaotropic agent is selected from the group consisting of sodium perchlorate, guanidinium hydrochloride, guanidinium isothiocyanate, sodium iodide, and potassium iodide.

162. (New) The process according to any one of claims 104, 134, 135-137, and 144, wherein the immobilization buffer has a pH of from 3 to 11.

163. (New) The process according to claim 101, wherein the membrane has pores that range from 1 to 20 micrometers in diameter.

164. (New) The process according to claim 101, wherein the membrane has pores that range from 1 to 10 micrometers in diameter.

165. (New) The process according to claim 101, wherein the membrane has pores that have a diameter of at least 1 μm.

166. (New) The process according to claim 101, wherein the membrane has pores that have a diameter of at least 1.2 μm.

167. (New) The process according to claim 101, wherein the membrane has pores that have a diameter of at least 3 μm.

168. (New) The process according to claim 101, wherein the membrane has pores that have a diameter of at least 5 μm.

169. (New) The process according to claim 101, wherein the membrane has pores that have a diameter of at least 10 μm.

170. (New) The process according to claim 101, wherein the membrane has pores that have a diameter of at least 20 μm.